

71  
**PLUMBERS'**  
*Handbook*



**KOVEN**  
**PRODUCTS**  
**FOR 1943**

**BE SURE TO  
SPECIFY  
"KOVEN"  
WHEN PLACING  
YOUR ORDER  
WITH THE  
JOBBER.**

**DO NOT ACCEPT SUBSTITUTES**



**L. O. KOVEN & BROTHER, Inc.  
154 OGDEN AVENUE  
JERSEY CITY, N. J.**

**Established 1881**

**WATERBURY & SONS CO. NEW YORK**

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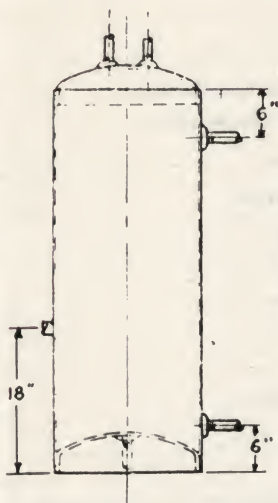


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# "KOVEN" GALVANIZED RANGE BOILERS

(1)

STOCK TYPE



UNIVERSAL

Can be used as:  
New Style  
Old Style  
Horizontal

WELDED

Gals.	Size		Taps
	Diam.	Length	
15	12"	30"	1"
30	12"	60"	1"
40	14"	60"	1"
66	18"	60"	1"
82	20"	60"	1"
120	24"	60"	1 1/2"

USE RELIEF VALVES ON ALL INSTALLATIONS



# "KOVEN" GALVANIZED RANGE BOILERS

(2)

## TEST AND WORKING PRESSURES

Type	Working Pressure	Mass Regulations	
		Test	Working Pressure
Standard .....	85 lbs.	200 lbs.	85 lbs.
Extra Heavy .....	150 lbs.	250 lbs.	106¼ lbs.

### GUARANTEES:

Guarantees are against defects in material or workmanship, and are good up to the time of installation and test only. The guarantee is to the extent of the cost of the boiler only and does not include any allowance for replacement or consequential damage. Material must not be returned without first receiving our permission. Guarantee of six years on Double Extra Heavy Boilers is on the basis of service rendered.

NO INSTALLATION GUARANTEED UNLESS MADE BY A  
MASTER PLUMBER

### Refer To

Page 69 for Hookup.

Page 67-68 for Prevention of Overheating.

Page 64 for Safety.

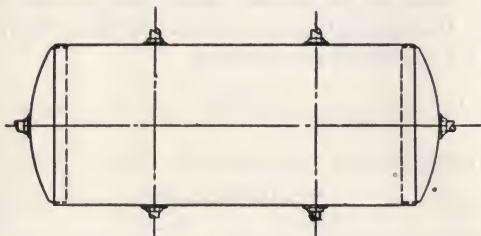
USE RELIEF VALVES ON ALL INSTALLATIONS

(3) "KOVEN" SILICON BRONZE (Herculoy)  
RANGE BOILERS



Universal Tap  
(Can be used as New, Old  
or Horizontal)  
30-40 Gal. Sizes

These boilers are made of a non-corrosive alloy of 96% copper. This alloy is as strong as steel. Seams and heads are welded with the same metal that makes a substantial tank that will give extraordinary service.



*Horizontal Type*

52 GALS. AND LARGER

**GUARANTEE:**

20 years on basis of service rendered on certified installations made by master plumbers where proper relief valves are used.

SPECIAL TAPS AND SIZES MADE TO ORDER

# "KOVEN" SILICON BRONZE (Herculoy) RANGE BOILERS

(4)

Size in Inches	Gals. Ca- pacity	T y p e	TAPS	LIST PRICES		
				200 lb. Test 85 lb. W.P.	250 lb. Test 106¼ lb. W.P.	350 lb. Test 148¾ lb. W.P.
12x60	30	Uni- versal	1"	\$36.00	\$44.00	\$52.00
14x60	40	"	1"	48.00	56.00	66.00
16x60	50	Hori- zontal	1"	65.00	75.00	92.00
18x60	60	"	1"	85.00	96.00	114.00
20x60	80	"	1¼"	116.00	130.00	154.00
22x60	100	"	1¼"	140.00	160.00	200.00
24x60	125	"	1½"	190.00	220.00	270.00

## CAUTION:

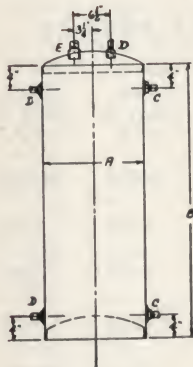
When installing horizontal copper range boilers use a thin sheet of lead or copper between the shell and the saddles. Never rest a copper tank on a pipe stand or flat steel beam.

A sealed pressure, temperature and vacuum valve should be used set to relieve at pressures no greater than the working pressure stamped on the boiler.

A lever handle type or one that can be tested periodically is preferable.

(5)

# "KOVEN" GALVANIZED SOLAR TANKS



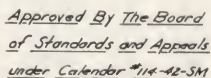
## PRESSURES

TEST — 150 LBS.

WORKING — 85 LBS.

Gals. Cap.	DIMENSIONS—INCHES					List Price
	TANK		TAPS			
	A	B	C	D	E	
52	16	60	$\frac{3}{4}$	$\frac{3}{4}$	1	\$22.00
66	18	60	$\frac{3}{4}$	$\frac{3}{4}$	1	26.00
41	20	30	$\frac{3}{4}$	$\frac{3}{4}$	1	28.00
82	20	60	$\frac{3}{4}$	$\frac{3}{4}$	1	36.00
50	22	30	$\frac{3}{4}$	$\frac{3}{4}$	1	32.00
100	22	60	$\frac{3}{4}$	$\frac{3}{4}$	1	40.00
60	24	30	$\frac{3}{4}$	$\frac{3}{4}$	1	33.00
100	24	48	$\frac{3}{4}$	$\frac{3}{4}$	1	40.00
120	24	60	1	$\frac{3}{4}$	1	47.00
150	30	48	1	$\frac{3}{4}$	1	74.00
180	30	60	1	$\frac{3}{4}$	1	88.00
210	36	48	1	1	1	85.00
265	36	60	1	1	1	100.00
315	36	72	1	1	1	124.00
290	42	48	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	132.00
360	42	60	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	146.00

(6)

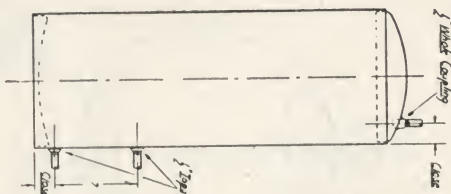


## FOR THE ELIMINATION OF GASOLINE AND OIL FROM SEWAGE SYSTEMS



# "KOVEN" EXPANSION TANKS

## (7) BASEMENT TYPE — CLOSED SYSTEMS

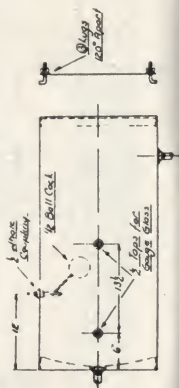


GREEN GLOSS PAINTED  
WORKING PRESSURE — 50 LBS.

No.	Size	Gals. Capacity	List Price
A	12x30	15	\$7.00
2	12x60	30	11.00
3	14x60	40	16.00

## GALVANIZED ANTI-WASTE

Size	Gals. Capacity	List Price
12x20	10	\$20.00
12x30	15	22.00
14x30	20	26.00
18x60	60	42.00
20x60	80	50.00
24x60	120	60.00



SPECIAL SIZES MADE TO ORDER



# "KOVEN" GALVANIZED STEEL EXPANSION TANKS

(8)

(OPEN SYSTEM)



Horizontal  
CONSTRUCTION  
Welded

WORKING PRESSURE  
50 Pounds

SPECIAL SIZES  
Made to Order

TAPS—TANK—1"  
GAUGE 1/2"

Size in Inches	Gallons Capacity	LIST PRICES
		Welded
12x30	15	\$9.00
14x30	20	11.00

# "KOVEN" BARBER BOILERS

(9)



85 LBS. WORKING  
PRESSURE

TWO 1" TAPS IN HEAD

WELDED CONSTRUCTION



USE RELIEF  
VALVES ON  
ALL  
INSTALLATIONS

## LIST PRICES

Size	Gals. Cap.	Galv.		SILICON BRONZE			Galv. Stands
		Std.	X Hv.	200 lb.	250 lb.	350 lb.	
12x10	5	\$10.00	\$11.00	\$28.00	\$36.00	\$44.00	
12x20	10	12.00	13.00	30.00	38.00	46.00	
14x20	12	13.00	14.00	40.00	48.00	56.00	

USE RELIEF VALVES ON ALL INSTALLATIONS

# "KOVEN" MARINE TANKS

GALVANIZED AIR

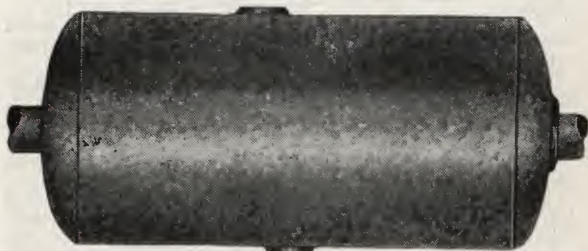
(10)



50 LBS. WORKING PRESSURE

Size in Inches	Taps	List Price
8x20	$\frac{3}{8}$ "	\$8.00
9x20	$\frac{3}{8}$ "	8.50
10x20	$\frac{3}{8}$ "	9.00
12x20	$\frac{3}{8}$ "	10.50
12x30	$\frac{3}{8}$ "	12.50
14x30	$\frac{3}{8}$ "	15.00

## GALVANIZED MUFFLER



Size in Inches	Taps	List Price
8x20	$\frac{3}{8}$ "	\$8.00
9x20	$\frac{3}{8}$ "	8.00
10x20	$\frac{3}{8}$ "	8.50
12x20	$\frac{3}{8}$ "	9.00
12x30	$\frac{3}{8}$ "	9.50
14x30	$\frac{3}{8}$ "	11.00

(11)

# "KOVEN" MARINE TANKS

## GALVANIZED GASOLINE



**WORKING PRESSURE 50 LBS.**

"KOVEN" TANKS ARE GALVANIZED WITH BOTTOM OUT SO THAT ALL TANKS ARE THOROUGHLY COATED INSIDE AND FREE FROM DROSS OR LOOSE PARTICLES.

"KOVEN" Tanks are substantially constructed as a guarantee of safety and long life and to withstand the severe usage which marine tanks are subjected to.

Size in Inches	Gals. Ca- pacity	TAPS		LIST PRICE	
		Filler	Vent & Outlet	Tank	Baffle Plates
9x20	4½	1"	¼"	\$8.00	\$3.75
10x20	5½	1"	¼"	8.50	3.75
12x20	8	1¼"	¼"	9.00	3.75
12x30	14	1¼"	¼"	9.50	3.75
14x30	20	1¼"	¼"	10.00	3.75
16x30	25	1¼"	¼"	11.50	4.60
16x60	50	1¼"	¼"	16.50	4.60
18x30	33	1½"	⅜"	17.50	4.60
18x60	66	1½"	⅜"	22.00	4.60
20x30	40	1½"	⅜"	19.50	6.00
20x60	80	1½"	⅜"	23.50	6.00
22x60	96	1½"	⅜"	26.00	6.00
24x60	110	1½"	⅜"	30.00	6.00

SPECIAL TAPS AND SIZES MADE TO ORDER

# "KOVEN" MARINE TANKS

## COPPER GASOLINE

(12)

### LOCK-SEAMED AND SOLDERED CONSTRUCTION

Size in Inches	Gallons Capacity	TAPS		List Price
		Filler	Vent & Outlet	
9"x20"	4½	1"	¼"	P R I C E S  O N  R E Q U E S T
10"x20"	5½	1"	¼"	
12"x20"	8	1¼"	¼"	
12"x30"	14	1¼"	¼"	
14"x30"	20	1¼"	¼"	
16"x30"	25	1¼"	¼"	
16"x36"	30	1¼"	¼"	
18"x42"	42	1½"	⅜"	
18"x48"	50	1½"	⅜"	

### SILICON BRONZE TANKS

WATER AND FUEL TANKS  
ARE ALSO MADE BY "KOVEN"  
OF SILICON BRONZE IN  
WELDED CONSTRUCTION  
DIAMETERS 12" TO 36".

SPECIAL SIZES MADE TO ORDER

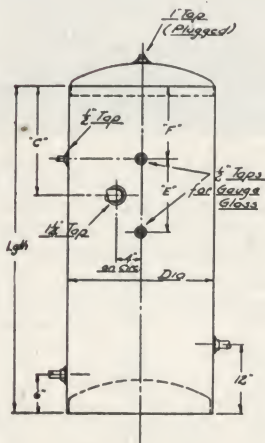


# "KOVEN" PNEUMATIC TANKS

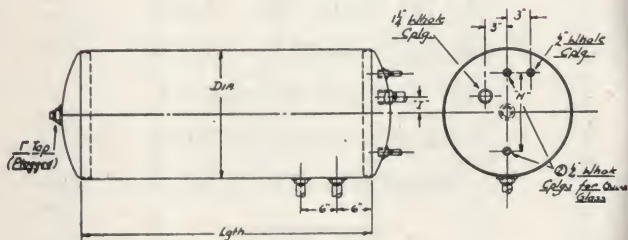
(13)

Welded

75 LBS. WORKING PRESSURE



VERTICAL



HORIZONTAL



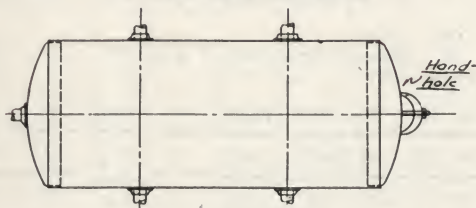
# "KOVEN" PNEUMATIC TANKS

(14)

Gals. Ca- pacity	Size In Inches	Ap- prox. Wt.	C	E	F	H	I	Inlet Outlet
15	12x 30	50	10"	13 <sup>3</sup> / <sub>8</sub> "	4"	8 <sup>3</sup> / <sub>8</sub> "	2"	1"
26	16x 30	80	10"	13 <sup>3</sup> / <sub>8</sub> "	4"	13 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>4</sub> "
41	20x 30	105	10"	15 <sup>3</sup> / <sub>8</sub> "	3"	13 <sup>3</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>4</sub> "
82	20x 60	160	20"	15 <sup>3</sup> / <sub>8</sub> "	13"	13 <sup>3</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>4</sub> "
100	24x 48	190	16"	15 <sup>3</sup> / <sub>8</sub> "	9"	13 <sup>3</sup> / <sub>8</sub> "	4"	1 <sup>1</sup> / <sub>4</sub> "
120	24x 60	222	20"	15 <sup>3</sup> / <sub>8</sub> "	13"	13 <sup>3</sup> / <sub>8</sub> "	4"	1 <sup>1</sup> / <sub>4</sub> "
144	24x 72	260	24"	17 <sup>3</sup> / <sub>8</sub> "	16"	13 <sup>3</sup> / <sub>8</sub> "	4"	1 <sup>1</sup> / <sub>4</sub> "
180	30x 60	355	20"	15 <sup>3</sup> / <sub>8</sub> "	13"	15 <sup>3</sup> / <sub>8</sub> "	5"	1 <sup>1</sup> / <sub>2</sub> "
220	30x 72	445	24"	17 <sup>3</sup> / <sub>8</sub> "	16"	15 <sup>3</sup> / <sub>8</sub> "	5"	1 <sup>1</sup> / <sub>2</sub> "
300	30x 96	485	32"	17 <sup>3</sup> / <sub>8</sub> "	24"	15 <sup>3</sup> / <sub>8</sub> "	5"	1 <sup>1</sup> / <sub>2</sub> "
365	30x120	585	40"	17 <sup>3</sup> / <sub>8</sub> "	32"	15 <sup>3</sup> / <sub>8</sub> "	5"	1 <sup>1</sup> / <sub>2</sub> "
315	36x 72	540	24"	17 <sup>3</sup> / <sub>8</sub> "	16"	17 <sup>3</sup> / <sub>8</sub> "	6"	1 <sup>1</sup> / <sub>2</sub> "
420	36x 96	660	32"	17 <sup>3</sup> / <sub>8</sub> "	24"	17 <sup>3</sup> / <sub>8</sub> "	6"	1 <sup>1</sup> / <sub>2</sub> "
525	36x120	780	40"	17 <sup>3</sup> / <sub>8</sub> "	32"	17 <sup>3</sup> / <sub>8</sub> "	6"	1 <sup>1</sup> / <sub>2</sub> "
720	42x120	1148	40"	17 <sup>3</sup> / <sub>8</sub> "	32"	17 <sup>3</sup> / <sub>8</sub> "	7"	2"
1000	42x168	1567	56"	17 <sup>3</sup> / <sub>8</sub> "	48"	17 <sup>3</sup> / <sub>8</sub> "	7"	2"
940	48x120	1752	40"	17 <sup>3</sup> / <sub>8</sub> "	32"	17 <sup>3</sup> / <sub>8</sub> "	8"	2 <sup>1</sup> / <sub>2</sub> "
1130	48x144	2092	48"	17 <sup>3</sup> / <sub>8</sub> "	40"	17 <sup>3</sup> / <sub>8</sub> "	8"	2 <sup>1</sup> / <sub>2</sub> "
1500	48x192	2488	64"	17 <sup>3</sup> / <sub>8</sub> "	58"	17 <sup>3</sup> / <sub>8</sub> "	8"	2 <sup>1</sup> / <sub>2</sub> "
1880	48x240	3010	80"	17 <sup>3</sup> / <sub>8</sub> "	72"	17 <sup>3</sup> / <sub>8</sub> "	8"	2 <sup>1</sup> / <sub>2</sub> "

SPECIAL SIZES MADE TO ORDER

# "KOVEN" SILICON BRONZE (Herculoy) (15) STORAGE TANKS



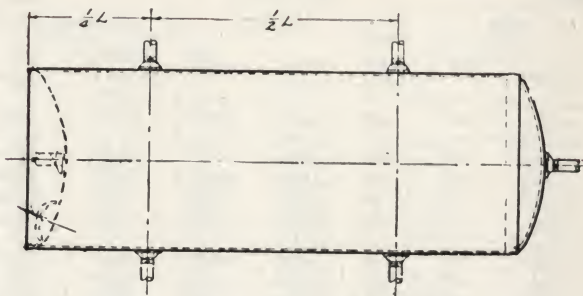
Handhole included on all 24" Diam. Tanks and Larger.  
Manhole included on all 42" Diam. Tanks and Larger.

Size	Gals. Cap.	Taps	LIST PRICES			
			200 lb. Test 85 lb. W.P.	250 lb. Test 106 1/4 lb. W.P.	300 lb. Test 127 1/2 lb. W.P.	350 lb. Test 148 3/4 lb. W.P.
24x 77	150	1 1/2"	\$249.00	\$293.00	\$331.00	\$369.00
30x 64	180	2"	300.00	349.00	396.00	453.00
30x 71	200	2"	313.00	360.00	404.00	473.00
30x 87	250	2"	364.00	407.00	478.00	553.00
30x103	300	2"	405.00	462.00	527.00	609.00
36x 74	300	2"	500.00	573.00	664.00	727.00
36x 86	350	2"	533.00	611.00	684.00	758.00
36x 98	400	2"	575.00	633.00	727.00	820.00
36x110	450	2"	618.00	709.00	800.00	891.00
36x121	500	2"	685.00	765.00	870.00	975.00
42x 90	500	2 1/2"	743.00	868.00	975.00	1,105.00
42x106	600	2 1/2"	863.00	970.00	1,094.00	1,210.00
42x123	700	2 1/2"	957.00	1,074.00	1,166.00	1,346.00
42x139	800	3"	1,094.00	1,251.00	1,431.00	1,623.00
42x156	900	3"	1,186.00	1,350.00	1,550.00	1,755.00
42x173	1000	3"	1,266.00	1,443.00	1,654.00	1,877.00

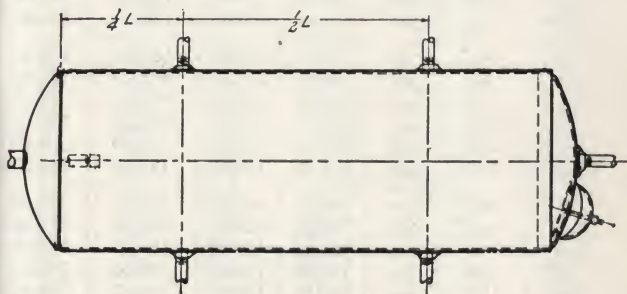
SPECIAL TANKS MADE TO ORDER

# "KOVEN" STEEL STORAGE TANKS

(16)



20-24" Diameter—1½" Taps-Handhole



30-36" diam.—2" Taps-Handhole

42" Diam.—2½" Taps-Handhole

48-54-60" Diam.—3" Taps-Manhole

## CONSTRUCTION:

ELECTRIC WELDED

## WORKING PRESSURE

STANDARD 75 lbs.

EXTRA HEAVY 100 "

USE RELIEF VALVES ON ALL INSTALLATIONS

# "KOVEN" STEEL STORAGE TANKS

## WELDED

(17)

SIZE		Gals. Capa- city	BLACK		ENAMELED	
Dia.	Lgth.		STD	X HVY	INSIDE X HVY	5 Yr. Guar.
20	60	80	36.00	42.00	52.00	66.00
24	48	100	40.00	45.00	58.00	74.00
24	60	120	46.00	54.00	66.00	84.00
24	72	140	54.00	62.00	74.00	96.00
24	96	190	74.00	80.00	94.00	126.00
30	48	160	56.00	60.00	78.00	102.00
30	60	200	60.00	64.00	82.00	110.00
30	72	235	66.00	70.00	88.00	120.00
30	96	310	76.00	90.00	116.00	156.00
30	108	340	82.00	94.00	122.00	166.00
30	120	380	86.00	100.00	132.00	176.00
36	48	230	78.00	100.00	136.00	166.00
36	60	285	84.00	115.00	144.00	180.00
36	72	340	88.00	122.00	152.00	198.00
36	96	445	100.00	140.00	176.00	230.00
36	108	500	106.00	146.00	186.00	244.00
36	120	550	116.00	154.00	198.00	264.00
42	48	325	80.00	90.00	120.00	150.00
42	60	395	94.00	106.00	140.00	170.00
42	72	465	108.00	122.00	158.00	194.00
42	96	610	136.00	154.00	198.00	244.00
42	108	680	142.00	170.00	220.00	268.00
42	120	755	156.00	188.00	242.00	294.00
42	144	900	172.00	225.00	280.00	354.00
42	168	1040	196.00	260.00	320.00	386.00
48	48	430	Not Made in STD.	152.00	190.00	232.00
48	60	520		166.00	210.00	256.00
48	72	615		180.00	230.00	280.00
48	96	805		218.00	276.00	328.00
48	108	900		232.00	296.00	352.00
48	120	990		248.00	316.00	370.00
48	132	1085		266.00	336.00	402.00
48	144	1180		282.00	358.00	434.00

USE RELIEF VALVES ON ALL INSTALLATIONS



# "KOVEN" STEEL STORAGE TANKS WELDED

(18)

Size		Gals. Ca- pacity	Extra Heavy	Enameled	
Dia.	Lgth.			Extra Heavy	5 Year Guarantee
48	156	1275	\$298.00	\$374.00	\$470.00
48	168	1370	312.00	396.00	486.00
48	180	1460	332.00	422.00	508.00
48	192	1555	348.00	442.00	534.00
48	204	1650	364.00	462.00	562.00
48	216	1745	380.00	486.00	586.00
48	228	1840	406.00	518.00	632.00
48	240	1930	424.00	538.00	648.00
54	72	790	238.00	308.00	370.00
54	96	1025	276.00	350.00	408.00
54	108	1145	296.00	382.00	440.00
54	120	1260	314.00	404.00	486.00
54	132	1380	332.00	426.00	512.00
54	144	1500	352.00	450.00	536.00
54	156	1620	370.00	478.00	573.00
54	168	1740	388.00	496.00	596.00
54	180	1865	406.00	522.00	620.00
54	192	1980	424.00	562.00	668.00
54	204	2095	444.00	572.00	686.00
54	216	2215	466.00	596.00	712.00
54	228	2330	482.00	618.00	732.00
54	240	2450	500.00	640.00	766.00
60	96	1275	318.00	398.00	476.00
60	108	1420	338.00	424.00	514.00
60	120	1570	364.00	456.00	546.00
60	132	1715	386.00	482.00	564.00
60	144	1865	406.00	512.00	608.00
60	156	2010	430.00	540.0	648.00
60	168	2155	452.00	568.00	676.00
60	180	2305	474.00	596.00	710.00
60	192	2450	496.00	624.00	740.00
60	204	2600	520.00	652.00	768.00
60	216	2745	540.00	678.00	808.00
60	228	2890	564.00	710.00	844.00
60	240	3040	586.00	738.00	882.00

USE RELIEF VALVES ON ALL INSTALLATIONS

# "KOVEN" STORAGE TANKS

(19)

## Special Types

Tanks in all sizes are made to order up to 1/2" thick shell.

Cylindrical, rectangular, conical or special shaped tanks made according to specifications of steel or alloy metals.

## Wrought Iron Tanks

Tank can be supplied made of A.M. Byers genuine wrought iron.

## Tanks Enameled Inside

A real quality job, a good substitute for galvanizing. Coating is plastic, tasteless, odorless and non-toxic. Tanks are thoroughly cleaned and all lap seams double welded before enamel is applied.

## Double Extra Heavy Tanks

Where longer life is desired on jobs involving costly replacements, "KOVEN" makes a specialty of tanks up to 1/2" thick. Extraordinary savings are effected by using these tanks of welded construction.

## Tanks Welded on Premises

"KOVEN" makes a specialty of building tanks on premises and the installation of heating coils. This often eliminates expensive building alterations. Old tanks cut up and new ones rigged on piers.

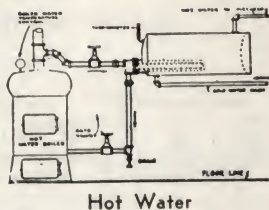
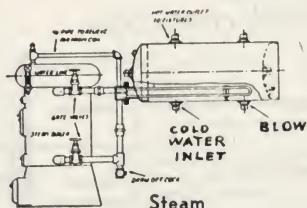
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USE RELIEF VALVES ON ALL INSTALLATIONS



# "KOVEN" DOMESTIC HOT WATER COIL TANKS

(20)



## BOILER FOR SUMMER WINTER HOOK-UP

Tank Size	Gals. Capacity	Sq. Ft.	Type Unit	Gals. Per Hour Boiler Water		Size of Inlet & Outlet
				212°	180°	
14x60	40	5	Screw	200	100	1 1/4"
14x60	40	5	Bolted	200	100	2"
14x60	40	6	Screw	240	120	1 1/4"
14x60	40	6	Bolted	240	120	2"
18x60	66	6	Bolted	240	120	2"
20x60	82	7 1/2	Bolted	300	150	2"
24x60	120	7 1/2	Bolted	300	150	2"
24x72	144	9	Bolted	360	180	2"
30x60	180	13 1/2	Bolted	555	270	2"

NOTE:—Install "KOVEN" Tanks so that Coil pitches slightly downward from the end where it is connected to the Boiler.

On Sectional Boilers, all Sections must be tapped.

DO NOT USE silicate of soda, it clogs the coil.

Use Automatic Controls to prevent overheating in the winter. (B & G Thermo Check or Watts Circ. Controller).

Flush coils regularly by closing gate valve on return from coil and opening the draw-off cock.

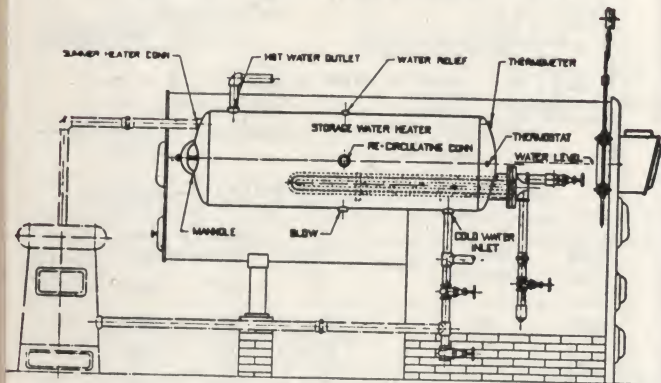
Stock tanks are in galvanized 300 lb. test but can be supplied in silicon bronze or wrought iron.

# REMOVABLE HEATING COILS

(21)

(Continued)

## BELOW WATER LINE OPERATION



Above illustration shows a typical installation on a coal fired boiler with an auxiliary coal heater for use in summertime.

See instructions for installation at bottom of page.

SEE COLUMN "C" OF COIL PRICES FOR THIS TYPE

On oil fired jobs, oil burner is also used to heat domestic supply with boiler water at 180° in the summertime.

SEE COLUMN "B" OF COIL PRICES FOR THIS TYPE

WHEN MAKING INQUIRIES BE SURE TO GIVE:

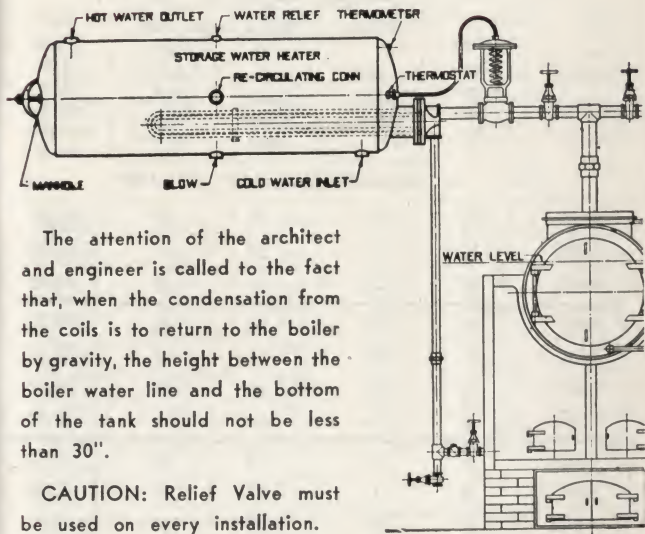
- (a) Type of installation.
- (b) Size of tank.
- (c) Gallons to be heated per hour.
- (d) Height of water column (distance between tapping just below water line and return to boiler.)
- (e) Make and type of boiler.

RELIEF VALVES SHOULD BE USED ON EVERY INSTALLATION

# REMOVABLE HEATING COILS

## STEAM

(22)



The attention of the architect and engineer is called to the fact that, when the condensation from the coils is to return to the boiler by gravity, the height between the boiler water line and the bottom of the tank should not be less than 30".

**CAUTION:** Relief Valve must be used on every installation.

Above illustration shows a typical installation on a steam job where live steam is always available.

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SEE COLUMN "A" OF COIL PRICES FOR THIS TYPE

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When making inquiries be sure to give:

- (a) Size of Tank.
- (b) Gallons to be heated per hour.
- (c) Whether steam is to be used at atmospheric pressure (0 lbs.) or number of pounds of steam available at all times.

# REMOVABLE HEATING COILS

(23)

(Continued)

Unit No.	Diam. Cop- per Tub- ing	Gallons Heated Per Hour			List Price Unit Only Includes Installa- tion
		Steam	Below Water Line		
		"A" 0 lbs. Pressure	"B" Summer Boiler Water 180°	"C" Winter Boiler Water 212°	
		40° to 180°	60° to 140°	40° to 140°	
336D	3/4"	70	21	42	\$36.00
348D	3/4"	95	28	57	40.00
360D	3/4"	120	36	72	44.00
436D	3/4"	120	36	72	44.00
448D	3/4"	155	46	93	52.00
460D	3/4"	200	60	120	54.00
472D	3/4"	230	69	138	58.00
536D	3/4"	160	48	96	62.00
548D	3/4"	215	64	129	72.00
560D	3/4"	275	82	165	78.00
572D	3/4"	325	97	195	82.00
660H	1 1/4"	250	75	150	86.00
636D	3/4"	300	90	180	86.00
672H	1 1/4"	300	90	180	90.00
684H	1 1/4"	350	105	210	94.00
648D	3/4"	400	120	240	94.00
696H	1 1/4"	400	120	240	96.00
660D	3/4"	500	150	300	102.00
6120H	1 1/4"	510			104.00
6144H	1 1/4"	610			116.00
672D	3/4"	600	180	360	110.00

# REMOVABLE HEATING COILS

(Continued)

(24)

Unit No.	Diam. Cop- per Tub- ing	Gallons Heated Per Hour			List Price Unit Only  Includes Installat- ion
		Steam	Below Water Line		
		"A" 0 lbs. Pressure	"B" Summer Boiler Water 180°	"C" Winter Boiler Water 212°	
		40° to 180°	60° to 140°	40° to 140°	
860H	1 1/4"	530	159	318	\$142.00
836D	3/4"	525	157	315	124.00
872H	1 1/4"	680	204	408	150.00
848D	3/4"	700	210	420	134.00
884H	1 1/4"	780	234	468	158.00
896H	1 1/4"	900	270	540	166.00
860D	3/4"	900	270	540	148.00
872D	3/4"	1100	330	660	166.00
8120H	1 1/4"	1140			182.00
8144H	1 1/4"	1380			216.00
1060H	1 1/4"	830	249	498	204.00
1036D	3/4"	800	240	480	200.00
1072H	1 1/4"	1000	300	600	218.00
1084H	1 1/4"	1160	348	696	230.00
1048D	3/4"	1125	337	675	212.00
1096H	1 1/4"	1320	396	792	242.00
1060D	3/4"	1400	420	840	226.00
10120H	1 1/4"	1640			264.00
1072D	3/4"	1700	510	1020	248.00
10144H	1 1/4"	2000			312.00
1236D	3/4"	1110	333	666	266.00
1260H	1 1/4"	1400	420	840	304.00



# REMOVABLE HEATING COILS

(Continued)

(25)

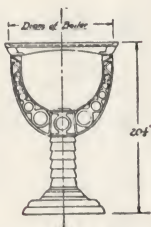
Jnit No.	Diam. Cop- per Tub- ing	Gallons Heated Per Hour			List Price Unit Only  Includes Install- ation
		Steam	Below Water Line		
		"A" 0 lbs. Pressure	"B" Summer Boiler Water 180°	"C" Winter Boiler Water 212°	
		40° to 180°	60° to 140°	40° to 140°	
1248D	3/4"	1540	462	924	\$292.00
1272H	1 1/4"	1680	504	1008	324.00
1284H	1 1/4"	1910	573	1146	344.00
1260D	3/4"	1970	591	1182	324.00
1296H	1 1/4"	2220	666	1332	364.00
1272D	3/4"	2400	720	1440	362.00
12120H	1 1/4"	2780	-----	-----	406.00
12144H	1 1/4"	3340	-----	-----	486.00
1560H	1 1/4"	1840	552	1104	384.00
1572H	1 1/4"	2230	669	1338	416.00
1584H	1 1/4"	2605	781	1562	444.00
1596H	1 1/4"	2995	898	1797	536.00
15120H	1 1/4"	3700	-----	-----	594.00
15144H	1 1/4"	4475	-----	-----	704.00
1760H	1 1/4"	2460	738	1476	546.00
1772H	1 1/4"	2900	870	1740	588.00
1784H	1 1/4"	3500	1050	2100	622.00
1796H	1 1/4"	4000	1200	2400	662.00
17120H	1 1/4"	4950	-----	-----	734.00
17144H	1 1/4"	6000	-----	-----	882.00



## GOVERNMENT TYPE RANGE BOILERS

(26)

1700E—3400E—8000E



## RANGE BOILER OUTFIT

**Fig. 38**

CONSTRUCTION—GALVANIZED WELDED

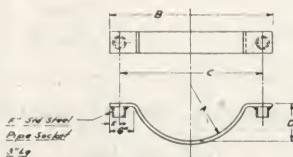
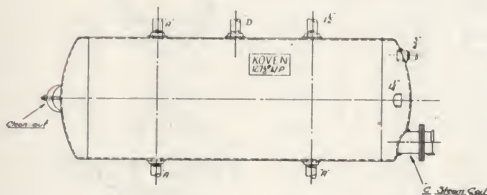
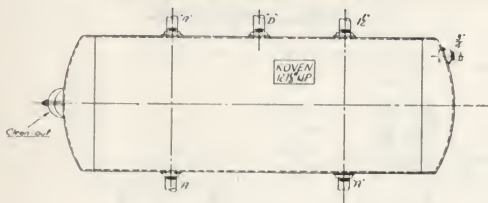
TEST—250 LBS.

Gals.	Size	ACCESSORIES
30	12x60	Taps—1" 2— $\frac{3}{4}$ "x1" Brass Boiler Couplings Drawoff Cock Tube
40	14x60	
60	18x60	
82	20x60	
120	24x60	Taps—1 $\frac{1}{2}$ " Drawoff Cock Tube

# GOVERNMENT TYPE TANKS

(27)

## HORIZONTAL — 8000E



Size	Socket Size	Pipe Stand Size	Lyth of Std Iron Flt Iron	Lyth	A	B	C	D	E	G
18"	2 1/2"	2"	3" x 1/2"	34"	9"	26"	22 1/2"	6"	1 1/2"	4"
20"	2 1/2"	2"	3" x 1/2"	38"	10 1/2"	28 1/2"	24 1/2"	6 1/2"	1 1/2"	4"
24"	2 1/2"	2"	3" x 1/2"	42"	12 1/2"	32 1/2"	28 1/2"	8 1/2"	1 1/2"	4"
30"	2 1/2"	2"	3" x 1/2"	52"	15 1/2"	38 1/2"	34 1/2"	11 1/2"	1 1/2"	4"
36"	2 1/2"	2"	3" x 1/2"	59"	18 1/2"	44 1/2"	40 1/2"	13 1/2"	1 1/2"	4"
42"	3 1/2"	3"	4" x 1/2"	71"	21 1/2"	52"	47 1/2"	15 1/2"	2 1/2"	5"
48"	3 1/2"	3"	4" x 1/2"	80"	24 1/2"	58"	53 1/2"	18 1/2"	2 1/2"	5"
54"	3 1/2"	3"	4" x 1/2"	83"	27 1/2"	64"	58 1/2"	21 1/2"	2 1/2"	5"

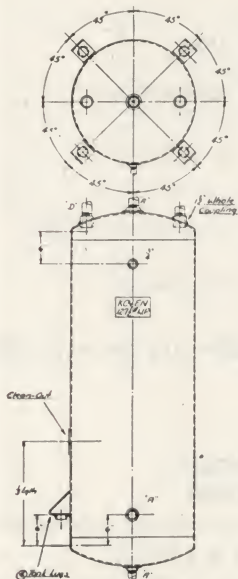
SEE PAGE 29 FOR COMPLETE DETAILS

# GOVERNMENT TYPE TANKS

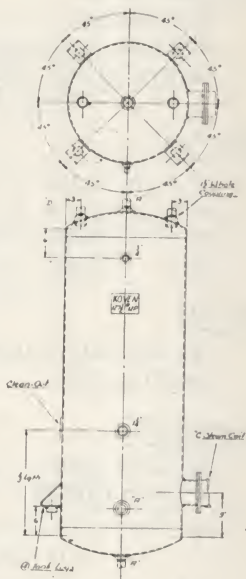
## VERTICAL

(23)

1700E—3400E—8000E



Tank without Coil



Tank with Coil

### PIPE LEG SIZES

18"-20"	Diameter — 1 1/4"
24"	Diameter — 1 1/2"
30"-36"-42"	Diameter — 2"
48"-54"-60"	Diameter — 3"

See Page 29 for Complete Details

# GOVERNMENT TYPE TANKS

(29)

1700E—3400E—8000E

## CONSTRUCTION

TEST—300 LBS.

WORKING PRESSURE—127½ LBS.

PAINTED—INSIDE—RED LEAD

OUTSIDE—BLACK ASPHALTUM

## TAPS "A"

18" to 24" DIAM. — 1½"

30" to 36" DIAM. — 2"

42" DIAM. — 2½"

48" DIAM. — 3"

## TAP "D"

TAP FOR DIAPHRAGM RELIEF VALVE ON ALL TANKS  
OVER 135 GALS.

## CLEANOUTS

18" to 36" DIAM. — HANDHOLE

42" AND LARGER — MANHOLE

## A C C E S S O R I E S

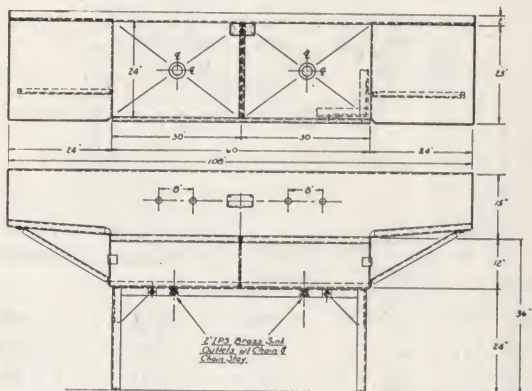
Tank Capacity	Mercurial Therm	Temp. & Press. Relief Valve	Diaphragm Relief Valve
Up to 135 gals.	¾"	¾"	None
135 to 360 gals.	¾"	¾"	¾"
360 to 630 gals.	¾"	¾"	1"
630 to 1350 gals.	¾"	¾"	1¼"

# GOVERNMENT TYPE SINKS

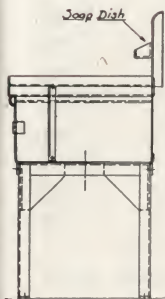
## GALVANIZED

(30)

W W P 541



Govt. No.	Sink Size	No. of Compartments	24" Drain Boards	
			Left	Right
S36	36x24x12	1		
S62R	36x24x12	1		1
S62L	36x24x12	1	1	
S60D	60x24x12	2		
S108D	60x24x12	2	1	1

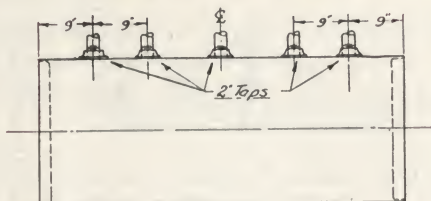




(31)

# "KOVEN" UNDERGROUND FUEL OIL TANKS

## UNDERWRITERS' LABEL



SIZE		Gallons Capacity	Gauge	Weight
Diam.	Overall Length			
30"	104"	300	3/16"	650
36"	68"	275	3/16"	510
36"	130"	550	3/16"	900
48"	72"	550	3/16"	800
48"	132"	1000	3/16"	1270
64"	72"	1000	3/16"	1150
48"	192"	1500	3/16"	1780
64"	108"	1500	3/16"	1540
64"	144"	2000	3/16"	1930
64"	180"	2500	3/16"	2320
64"	216"	3000	3/16"	2710
64"	288"	4000 *	3/16"	3490
No Label				
48"	72"	550	No. 12	450
48"	132"	1000	No. 12	750

MANHOLES—16"—\$20.00 18"—\$24.00 20"—\$28.00

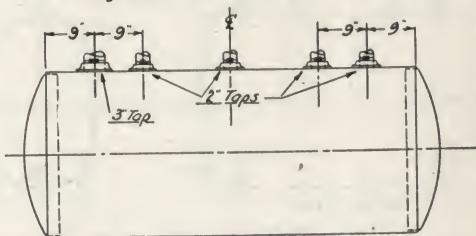
GAUGE STICKS and CHARTS—\$2.00

MAGNETIC GAUGES—\$2.50

# "KOVEN" UNDERGROUND FUEL OIL TANKS

(32)

## NEW YORK CITY SPECIFICATIONS



Size		Gallons Capacity	Gauge		Weight
Diam.	Overall Length		Shell	Heads	
30"	104"	300	1/4"	5/16"	820
36"	68"	275	1/4"	5/16"	750
30"	188"	550	1/4"	5/16"	1450
36"	131"	550	1/4"	5/16"	1250
42"	96"	550	1/4"	5/16"	1100
48"	84"	550	1/4"	5/16"	1090
48"	108"	750	1/4"	5/16"	1480
48"	144"	1000	1/4"	5/16"	1850
48"	190"	1500	1/4"	5/16"	2560
60"	136"	1500	1/4"	5/16"	2310
60"	172"	2000	1/4"	5/16"	2970
60"	220"	2500	1/4"	5/16"	3500
60"	256"	3000	1/4"	5/16"	4100
Gas 42"	96"	550	1/4"	1/4"	1050

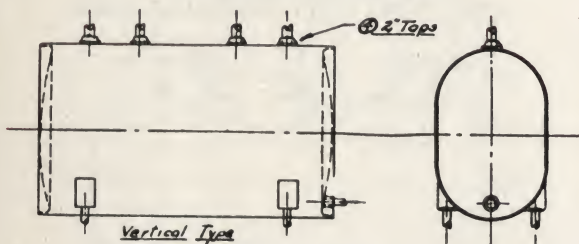
MANHOLE INCLUDED IN TANKS 1500 GALS.  
AND LARGER

GAUGE STICKS AND CHARTS—\$2.00

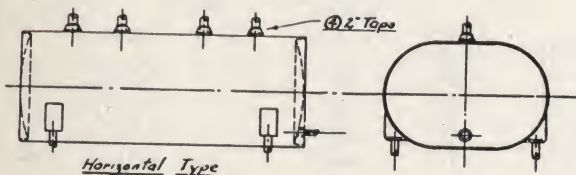
MAGNETIC GAUGES—\$2.50

(33)

# "KOVEN" OBROUND FUEL OIL BASEMENT TANKS



VERTICAL TYPE



HORIZONTAL TYPE

CAPACITY—275 GALLONS

## UNDERWRITERS' SPECIFICATION

SIZE—26"x42"x66"

OUTLET— $\frac{3}{8}$ "

HEAVY TYPE—No. 12 GAUGE

LIGHT TYPE—No. 14 GAUGE

## NEW YORK CITY SPECIFICATIONS

SIZES—26"x42"x66"

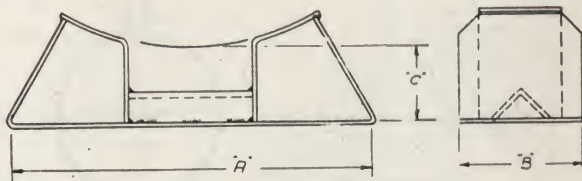
22"x44"x72"

OUTLET— $\frac{3}{4}$ "

No. 10 GAUGE

# "KOVEN" STEEL SADDLES HEAVY DUTY—BUILT UP TYPE

(34)



Tank Diameter	"A" Length	"B" Width	"C" Height to Bottom of Tank	List Price
24"	17½"	6"	3½"	\$20.00
30"	21¼"	6"	3½"	22.00
36"	26¾"	6"	5"	26.00
42"	30"	8"	5"	28.00
48"	33¼"	8"	5"	36.00
54"	37¾"	8"	6"	44.00
60"	41¼"	8"	6"	48.00

# "KOVEN" HANGERS, STANDS AND BRACKETS

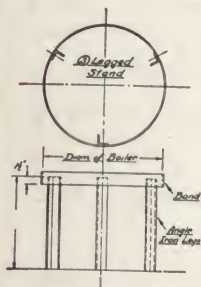
(35)



Wall  
Bracket

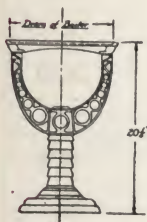


Hanger



3 LEGGED STAND

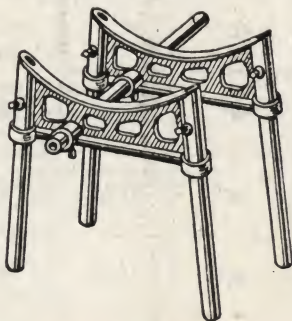
Diam.	Band	Legs
10"	2"x3/16"	1 1/2"x1 1/2"x3/16"
12"	2"x3/16"	1 1/2"x1 1/2"x3/16"
14"	2"x3/16"	1 1/2"x1 1/2"x3/16"
16"	2"x3/16"	1 1/2"x1 1/2"x3/16"
18"	2"x1/4"	1 1/2"x1 1/2"x1/4"
20"	2"x1/4"	1 1/2"x1 1/2"x1/4"
22"	2"x1/4"	1 1/2"x1 1/2"x1/4"
24"	2 1/2"x1/2"	2"x2"x1/4"
30"	2 1/2"x1/2"	2"x2"x1/4"
36"	2 1/2"x1/2"	2"x2"x1/4"



CAST IRON  
PEDESTAL

Single Stand  
30" Diam.

Less  
(Pipe Legs  
and Cross Bar  
Furnished by  
Plumber. Pipe  
Not Thread-  
ed).



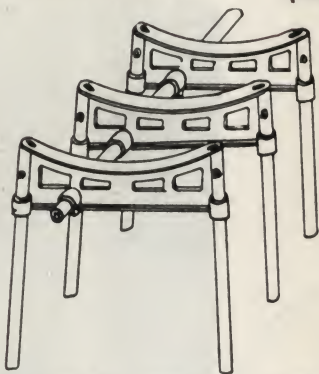


# "KOVEN" HANGERS, STANDS AND BRACKETS

(36)

Double Type  
Stand for Tanks  
36" Diameter  
And Larger

(Pipe Legs and Cross  
Bar Furnished By Plum-  
ber. Pipe Not Thread-  
ed).



## LIST PRICES

Diam. of Tank	Brackets Per Pair	Per Pair Hangers	3 Legged Stand	C. I. Pedestal	PIPE LEG STAND		
					Legs	Cross Bar	List Price
					Single		
10"	\$9.00	\$5.25	\$4.00				
12"	9.00	5.25	4.00	\$1.75	1"	1"	\$4.00
14"	9.00	5.25	4.50	2.00	1"	1"	4.00
16"	9.75	6.00	5.00	2.50	1"	1"	4.00
18"	12.00	6.00	5.50	3.50	1"	1"	4.00
20"	12.00	8.25	6.00	4.25	1"	1"	5.00
22"	14.25	8.25	6.50	5.00	1"	1"	6.00
24"	14.25	9.00	7.00	5.75	1"	1"	6.00
30"		21.00	7.50		1 1/4"	1 1/4"	10.00
36"		25.50	8.00		Double		
					1 1/2"	1 1/4"	28.00
42"					2"	1 1/2"	38.00
48"					2 1/2"	2"	60.00

# "KOVEN" STEEL SEPTIC TANKS

(37)



## OUTLETS

Up to 700 Gals.  
4"

Over 700 Gals.  
6"

## VERTICAL TYPE TANKS

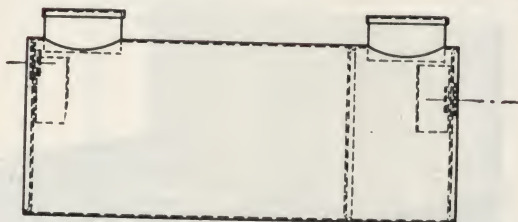
Gals. Capacity		Size		Rating — No. Persons				List Price
Full	To Outlet	Diam.	Depth	Home	Hotel	School	Factory	
240	200	38"	48"	6	8	15	12	\$22.50
375	300	48"	48"	10	14	25	20	30.00
550	470	52"	60"	18	25	40	35	45.00

## HORIZONTAL TYPE TANKS

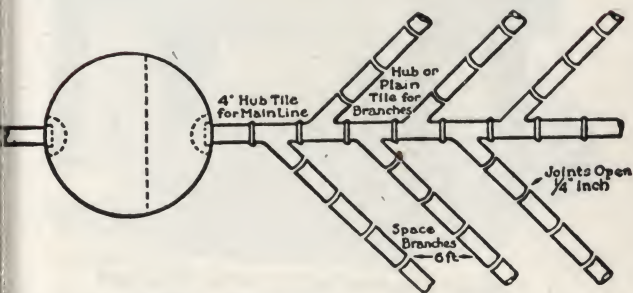
Gals. Capacity		Size		Rating — No. Persons				List Price
Full	To Outlet	Diam.	Length	Home	Hotel	School	Factory	
550	450	52"	60"	18	20	40	35	\$80.00
1100	900	52"	120"	40	50	80	70	116.00
1700	1200	64"	120"	50	65	100	90	220.00
2350	2000	64"	168"	90	125	165	140	300.00
3000	2500	64"	216"	110	150	210	180	360.00

# "KOVEN" STEEL SEPTIC TANKS

(38)



Horizontal Type



PLAN VIEW SHOWING METHOD  
OF LAYING DRAINS

## Instructions for Installing Septic Tanks

All joints in sewer tile to tanks should be cemented and laid with a good pitch. All joints in sewer tile from tank should be open and only covered on top to prevent dirt getting in. Lay these on a very slight pitch with only about 12 inches of soil over them.

For full information see the U. S. Government Bulletin, Report No. 625, Sanitary Disposal of Sewage Through a Septic Tank, and Supplement No. 58, Sewage Disposal for Suburban and Country Homes.

(39)

## "KOVEN" GALVANIZED STEEL SCULLERY SINKS



### SINGLE COMPARTMENT WITH STRAINER

Sinks are made of best quality blue annealed steel and galvanized by the hot dip process after fabrication.

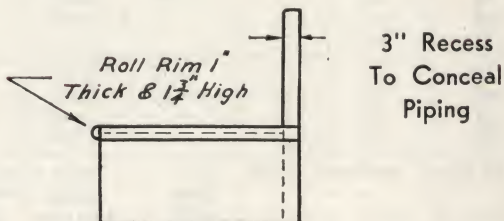
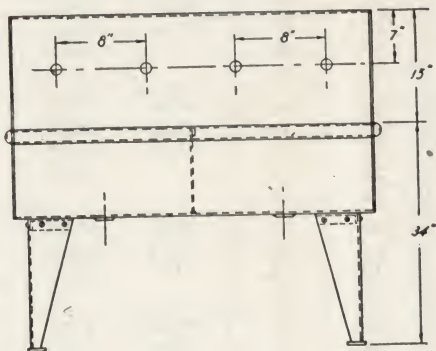
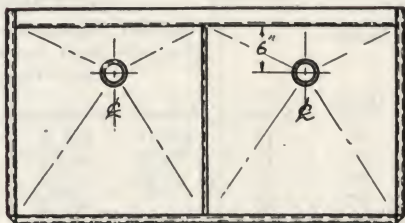
Back, bottom and front (including recess and roll rim) made in one piece with ends welded in.

When requesting prices or sending orders be sure to give the following information:

1. Inside measurements of sink (length, width and depth).
2. Number of compartments.
3. Gauge of metal.
4. Height of back (if any).
5. Distance of rim from floor.
6. Location and size of outlets.
7. Location and distance between faucet holes.
8. Size of drainboards (if any) (right or left hand).
9. Whether drainboards are to be flanged on three sides or to have back to match sink and be flanged on front and side.
10. What fittings (if any) are to be furnished by us.

# "KOVEN" GALVANIZED STEEL SCULLERY SINKS

(40)



Unless otherwise specified, back, height of rim from floor, outlets and faucet holes will be furnished as shown above.



(41)

# "KOVEN" GALVANIZED SCULLERY SINKS

SIZES			LIST PRICES		
			Includes Single Compartment Sink with Black and Steel Legs No Fittings		
Length	Width	Depth	14 Gauge	12 Gauge	10 Gauge
24	24	12	\$37.10	\$38.75	\$41.50
36	24	12	39.45	40.40	45.00
48	24	12	41.80	43.75	48.50
60	24	12		47.10	52.00
72	24	12			55.50
36	30	12	47.35	50.90	53.00
48	30	12	50.00	54.25	57.00
60	30	12		57.60	61.00
72	30	12			65.00
24	24	16	48.40	49.15	51.50
36	24	16	49.65	50.80	55.25
48	24	16	52.15	54.15	59.00
60	24	16		57.50	62.75
72	24	16			66.50
36	30	16	60.45	61.30	68.35
48	30	16	62.15	64.65	72.85
60	30	16	63.85	68.00	77.35
72	30	16			81.85
24	24	20	56.10	59.55	61.80
36	24	20	58.80	61.20	65.80
48	24	20	61.45	64.55	69.80
60	24	20		67.90	73.80
72	24	20			77.80
36	30	20	65.70	71.70	75.10
48	30	20	68.70	75.05	79.60
60	30	20		78.40	84.10
72	30	20			88.60
U. S. Gov't WWP541—Outfit			S36	45.00	Complete with Soap Dish and 2" Waste Outlets.  Faucets and Other Fittings Not Included
"			S62R	58.00	
"			S62L	58.00	
"			S60D	60.00	
"			S108D	90.00	

# "KOVEN" GALV. SCULLERY SINKS

## ACCESSORIES

(42)

TO BE ADDED TO REGULAR SINK FOR COMPLETE PRICE

Description	List Price
Partitions for additional compartments.....	\$6.90
Drainboard with back to match sink—24".....	13.00
Drainboard with back to match sink—30".....	14.35
Drainboard with back to match sink—36".....	15.70
Drainboard with (3) three flanged sides—24".....	7.40
Drainboard with (3) three flanged sides—30".....	7.75
Drainboard with (3) three flanged sides—36".....	8.15
Galvanized perforated corner strainer.....	4.20
Pipe legs, set of 4.....	7.50
Angle iron frame.....	5.50
Brass waste outlet 1½"—(inc. tail piece).....	1.70
Brass waste outlet—2" ".....	3.25
Connected waste and overflow—1½".....	6.50
Connected waste and overflow—2".....	8.15
Twin waste connection (Inc. Outlets)—1½".....	8.34
Twin waste connection (Inc. Outlets)—2".....	11.67
Lever Handle quick opening waste—2".....	8.00
U. S. Gov't. Type Faucets—¾" Set of Two.....	7.00
Duo Strainers.....	6.00

We also make sinks to fit in any given space and of heavier gauges than No. 10.

We specialize in sinks fabricated of Monel, Allegheny and other alloys.

# "VENKO" STEEL BOILER

(43)

ECONOMY

BEAUTY

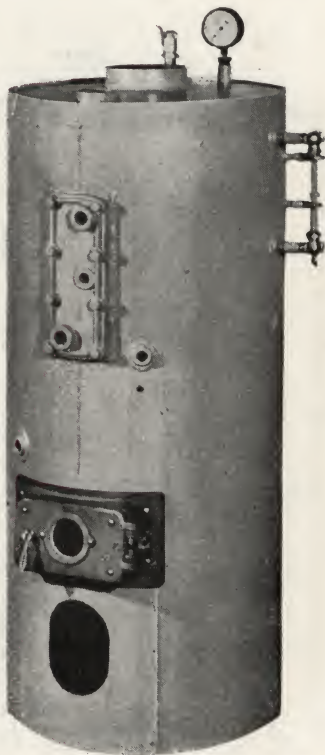
PERFORMANCE



DE LUXE JACKET  
COVERS BOILER AND BURNER

"VENKO" STEEL BOILER  
A WELDED TUBULAR BOILER  
For the Small Home

(44)



UNJACKETED BOILER SHOWING TANKLESS COIL.  
DIMENSIONS & DETAILS—PAGES 45-46

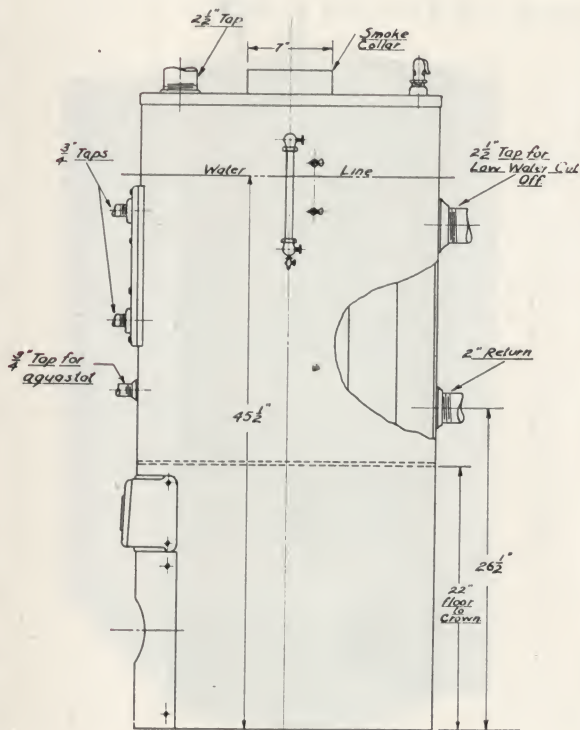
# "VENKO" STEEL BOILER

(45)

LOW PRESSURE

Steam 15 Lbs. W.P.—Water 30 Lbs. W.P.

DETAILS & DIMENSIONS



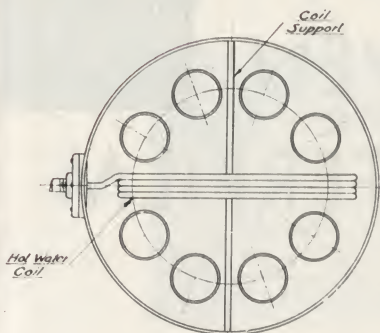
Note: Special combustion chamber consisting of chamber, cement, back fill and insulating segments to properly protect base available with boiler.



# "VENKO" STEEL BOILER

## DETAILS & DIMENSIONS

(46)



All tubes are  
furnished with  
Baffles.

*Plan View Showing  
Tube Arrangement*

Ratings S.H.B.I.—Steam .....	400
Water .....	640
Horsepower .....	1.82
Grate area sq. ft. ....	2.9
Heating surface sq. ft. ....	18.25
Floor to Crown Sheet .....	22"
Furnace Volume .....	3.60
B. T. U. Output .....	96,000
Firing Rate G. P. H. ....	1—1.35
Water Content—Gals. ....	37
Height—Waterline .....	45½"
Overall .....	52"
Diameter—Inside Base .....	23¼"
Overall .....	23⅝"
Smoke Outlet .....	7"
Pipe Size—Flow .....	2½"
Return .....	2"

SEE PAGE 61 FOR COIL DETAILS.

(47)

KOVEN  
WATERFILM  
BOILERS  
INC. • PAT.  
JERSEY CITY, N.J.

# KOVEN WATERFILM

---

*THE  
FASTEST  
STEAMING  
BOILER  
MADE*

---

A WELDED STEEL BOILER  
FOR  
AUTOMATIC FIRING  
BY  
OIL, STOKER or GAS

---

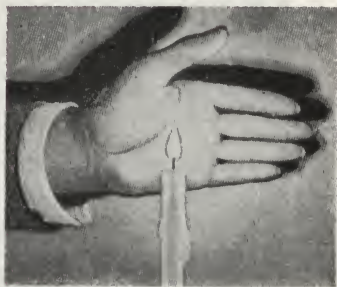
LOW PRESSURE

Steam 15 Lbs. W.P.—Water 30 Lbs. W.P.

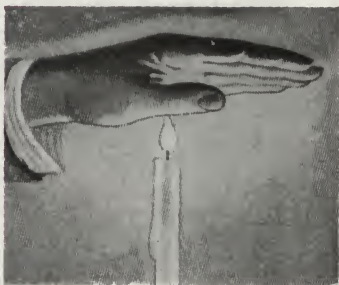
## "KOVEN" WATERFILM BOILERS

. . . Try This Test Yourself . . .

(48)



WITH THE HAND IN THIS POSITION  
VERY LITTLE HEAT IS FELT.



WITH THE HAND IN THIS POSITION  
THE HEAT IS UNBEARABLE.

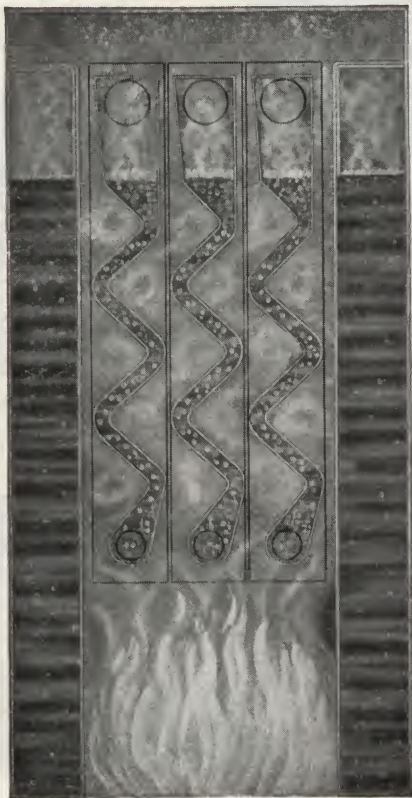
This proves the greatest heat is directed against a surface above the combustion and at right angles to heat travel.

## "KOVEN" WATERFILM BOILERS

(49)

●  
THE  
ONLY  
BOILER  
THAT  
PRODUCES  
STEAM  
WITH 15%  
OF ITS  
WATER  
BOILING

●



ECONOMY is the principle feature of "KOVEN" WATERFILM BOILERS. By the use of generators placed over the combustion the greatest amount of heat is transferred to the water contained therein. The generators are constructed with zig-zag walls to give more heating surface. This construction also causes the flames and heat from the combustion to be baffled back and forth between the generators and to strike the heating surfaces at right angles.

# "KOVEN" WATERFILM BOILERS

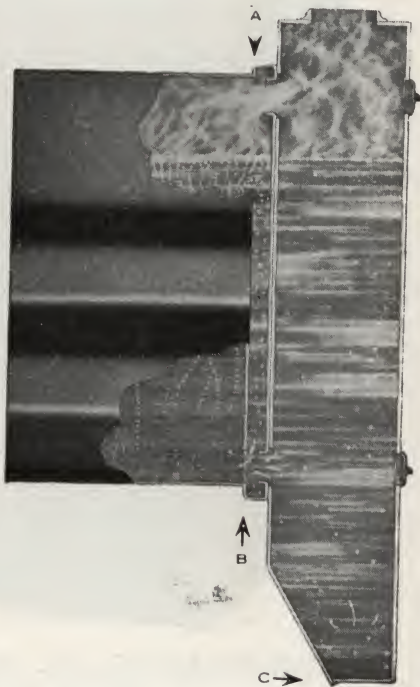
(50)

QUICK HEAT is another feature of "KOVEN" WATERFILM BOILERS. Each generator contains only a  $\frac{3}{4}$ " film of water. On steam jobs the water in the generator is completely isolated from the water in the main jacket as far as circulation is concerned. This water boils rapidly sending steam into the mains before the water in the jacket becomes heated.

On hot water jobs, Quick Heat is also generated and causes rapid circulation.

Each generator is fastened to the boiler at "A" and "B" with bronze screw bushings. These generators can easily be removed and, being attached to the boiler on one side only, they will not leak because of expansion or contraction.

Return water enters jacket at a remote point "C" from the generators. This keeps the generators free from sediment.





# "KOVEN" WATERFILM BOILERS

(51)

MODEL "O"

FOR THE ONE FAMILY HOME



## THE SQUARE DE LUXE JACKET

ILLUSTRATED HERE IS THE GREEN ENAMEL FINISHED JACKET WHICH ENCLOSES BOILER, BURNER AND TANK-LESS OR INDIRECT HEATER. IT IS A MARVELOUS COMPACT UNIT FOR THE ONE FAMILY HOUSE.

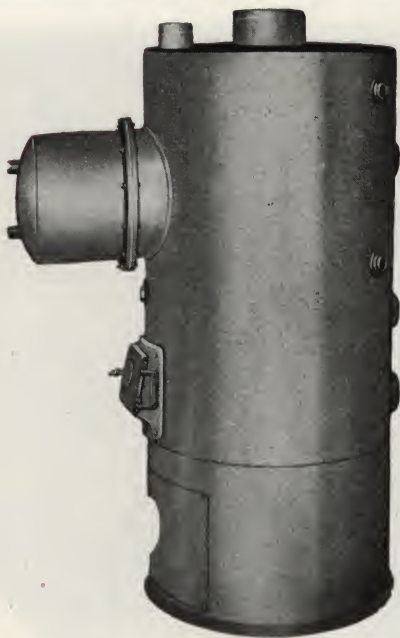
# "KOVEN" WATERFILM BOILERS

MODEL "O"

(52)

LOW PRESSURE

STEAM 15 LBS. W.P. — WATER 30 LBS. W.P.



Side View Showing Tankless Coil

---

AVAILABLE AS A COMPLETE BOILER BURNER UNIT WITH  
BOILER, DE LUXE JACKET, OIL BURNER, COMBUSTION  
CHAMBER AND CONTROLS.

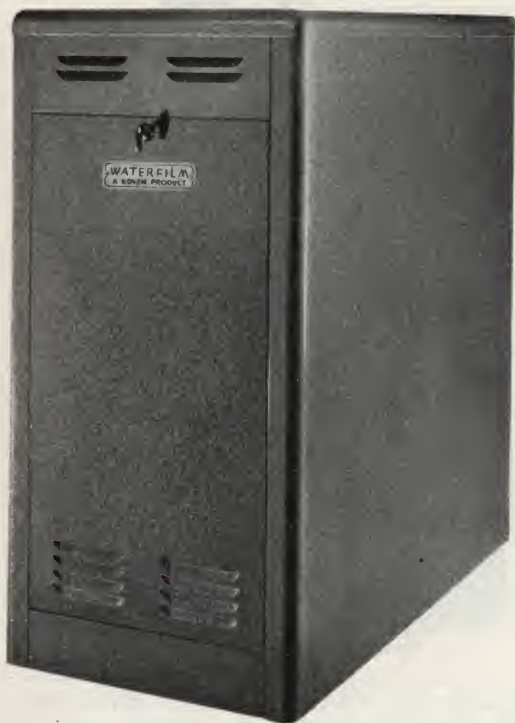
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DETAILS & DIMENSIONS—PAGES 59-60  
COILS—PAGE 61

(53) "KOVEN" WATERFILM BOILERS  
DE LUXE MODEL

LOW PRESSURE

STEAM 15 LBS. W.P. — WATER 30 LBS. W.P.



S.H.B.I. RATING—STEAM—765 TO 1190  
COMPLETE DETAILS & DIMENSIONS—PAGES 59-60  
COILS—PAGE 61

# "KOVEN" WATERFILM BOILERS

(54)

## DE LUXE MODEL

For the Better Grade Home



View of De Luxe Unit with side panel removed showing space available for burner, compactness and accessibility of burner, hot water coil and all controls.

---

AVAILABLE AS A COMPLETE BOILER BURNER UNIT WITH BOILER, DE LUXE JACKET, OIL BURNER, COMBUSTION CHAMBER AND CONTROLS.

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(55)

# "KOVEN" WATERFILM BOILERS

## ONE PIECE MODEL

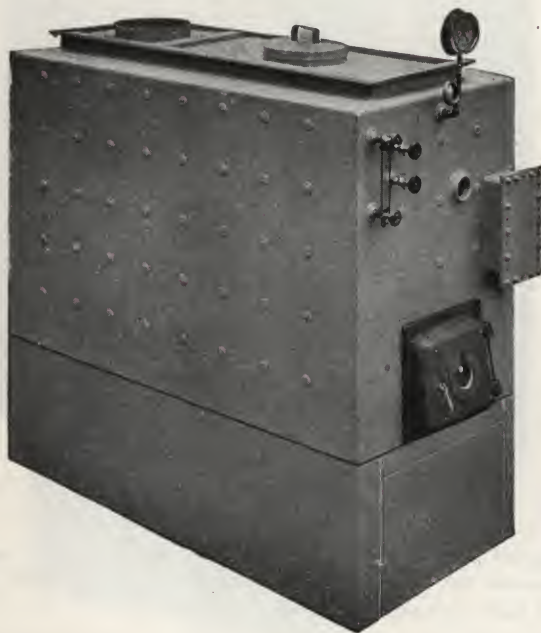
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LOW PPESSURE

STEAM 15 LBS. W.P. — WATER 30 LBS. W.P.

---

A.S.M.E. CONSTRUCTION



FOR THE MULTIPLE FAMILY HOUSE, APARTMENT HOUSE  
AND INDUSTRIAL BUILDING WHERE SUFFICIENT ROOM IS  
AVAILABLE TO BRING IN A ONE PIECE BOILER.



# "KOVEN" WATERFILM BOILERS

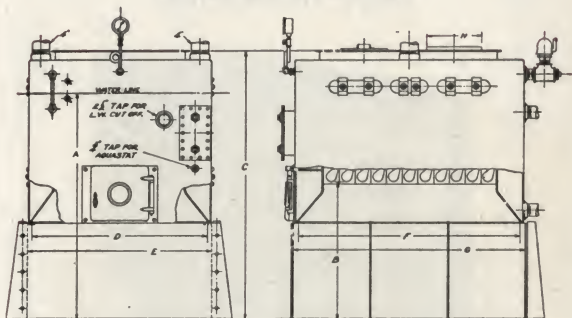
## ONE PIECE MODEL

(56)

LOW PPESSURE

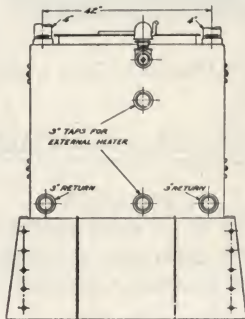
STEAM 15 LBS. W.P. — WATER 30 LBS. W.P.

A.S.M.E. CONSTRUCTION



Front

Side



Rear

S.H.B.I. RATING—STEAM 1,800—8,500  
DETAILS & DIMENSIONS—PAGES 59-60  
COILS—PAGE 61

(57)

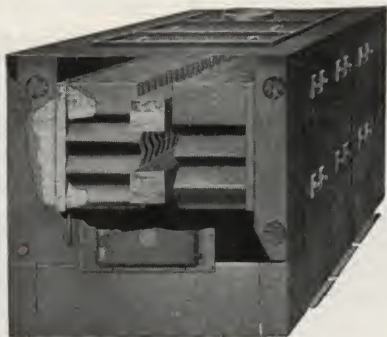
## "KOVEN" WATERFILM BOILERS SECTIONAL SERIES

---

LOW PPESSURE  
STEAM 15 LBS. W.P. — WATER 30 LBS. W.P.

---

A.S.M.E. CONSTRUCTION



S.H.B.I. RATING—STEAM 1,390—17,850

### DISTINCT ADVANTAGES

GOES THRU A 2 FOOT DOOR  
ASSEMBLED WITH PUSH NIPPLES & TIE RODS  
ELIMINATES BUILDING ALTERATION  
EXPENSIVE RIGGING UNNECESSARY

BASE CAN BE MADE TO SPECIFICATION

BOILER CAPACITY CAN BE INCREASED  
BY ADDITION OF NEW SECTIONS  
WHENEVER DEMANDS ARE INCREASED

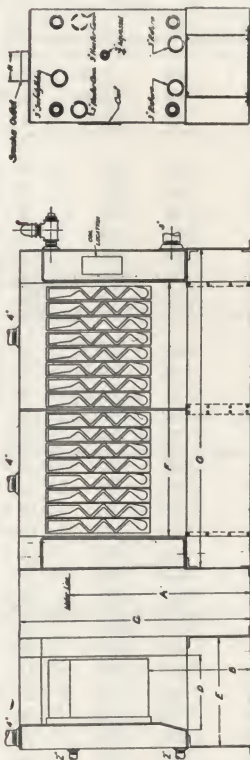
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# "KOVEN" WATERFILM BOILERS

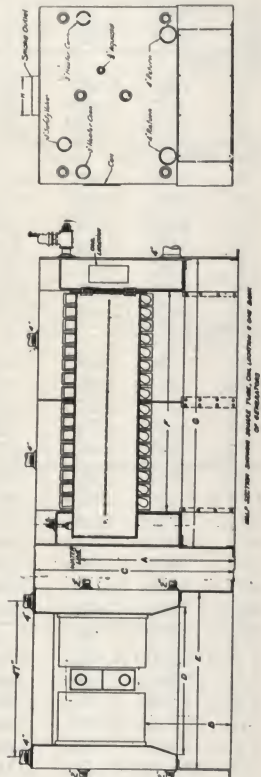
## SECTIONAL SERIES

(58)

### Single Sectional



### Double Sectional



DETAILS & DIMENSIONS—PAGES 59-60  
COILS—PAGE 61

# "KOVEN" WATERFILM BOILERS

(59)

## DETAILS AND DIMENSIONS

Boiler No.	S.H.B.I. RATING		B.T.U. Output Per M	Grate Area — Sq. Ft.	Heat-ing Sur-face — Sq. Ft.	Gross Fur-nace Volume — Gross	Firing Rate — G.P.H.
	Steam	Hot Water					
"O" SERIES							
200	610	980	146	2.34	36	5.6	1.5
DE LUXE							
3	765	1225	183	2.6	45	8.96	2
4	970	1552	232	3	57	10.98	2.75
5	1190	1900	289	3.55	70	12.5	3
ONE PIECE							
8	1800	2880	432	5.2	106	22	5
11	2400	3900	578	6.9	142	29	7
14	3020	4832	724	8.7	178	45	8.5
18	3400	5440	816	11	200	56	9
22	4250	6800	1020	13.6	250	65	12
34	6375	10,200	1530	19.8	375	106	18
46	8500	13,600	2040	26.2	500	137	24
SECTIONAL							
1-6	1390	2224	333	4.3	82	24.3	4
1-8	1800	2880	432	5.4	106	29.5	5
1-10	2210	3530	530	6.5	130	34.40	6
1-12	2620	4192	628	7.55	154	39	7
1-14	3030	4848	727	8.7	178	49.5	8.5
2-8	3400	5440	816	11	200	60	9
2-10	4250	6800	1020	13.6	250	70	12
2-12	5100	8160	1224	16.1	300	80	14
2-14	5950	9520	1424	18.6	350	90	17
2-16	6800	10,880	1632	21	400	100	19
2-18	7650	12,240	1838	23.5	450	126	21
2-20	8500	13,606	2040	26.2	500	139	24
2-22	9350	14,980	2244	28.1	550	150	26
2-24	10,200	16,320	2448	31.1	600	161	29
2-26	11,050	17,680	2652	33.6	650	172	31
2-28	11,900	19,040	2856	36.2	700	210	34
2-30	12,750	20,600	3060	38.7	750	223	36
2-32	13,600	21,760	3264	41.2	800	235	38
2-34	14,450	23,120	3468	43.6	850	248	42
2-36	15,400	24,640	3676	46.1	900	261	44
2-38	16,150	25,848	3876	48.75	950	274	46
2-40	17,000	27,200	4080	51.2	1000	287	48
2-42	17,850	28,560	4284	53.65	1050	300	51

# "KOVEN" WATERFILM BOILERS

## DETAILS AND DIMENSIONS

(60)

Base	Water Line	HEIGHT (Inches)		WIDTH (Inches)		LENGTH (Inches)		Pipe Size
		To Gener- ators	Over- all	Be- tween Water Legs	Over- all	Be- tween Water Legs	Over- all	Flow
16	43	23 $\frac{1}{4}$	52	18	23	18	23	1-2 $\frac{1}{2}$ "
17	49	28 $\frac{1}{2}$	62	24 $\frac{1}{2}$	30	20 $\frac{3}{8}$	24	1-4"
17	49	28 $\frac{1}{2}$	62	24 $\frac{1}{2}$	30	24 $\frac{3}{8}$	28	1-4"
17	49	28 $\frac{1}{2}$	62	24 $\frac{1}{2}$	30	28 $\frac{3}{8}$	32	1-4"
25	57	36 $\frac{1}{2}$	67	28	31	33	41	2-4"
25	57	36 $\frac{1}{2}$	67	28	31	45 $\frac{1}{2}$	53	2-4"
30	62	41 $\frac{1}{2}$	75	30	33	64	65	2-4"
30	62	41 $\frac{1}{2}$	75	46 $\frac{1}{2}$	50	50	53	2-4"
30	62	41 $\frac{1}{2}$	75	46 $\frac{1}{2}$	50	58	61	2-4"
36	68	47 $\frac{1}{2}$	81	46 $\frac{1}{2}$	50	82	85	4-4"
36	68	47 $\frac{1}{2}$	81	46 $\frac{1}{2}$	50	106	109	6-4"
25	57	34 $\frac{1}{2}$	68	19 $\frac{1}{2}$	31	24 $\frac{1}{2}$	43	1-4"
25	57	34 $\frac{1}{2}$	68	19 $\frac{1}{2}$	31	32 $\frac{1}{2}$	51	1-4"
25	57	34 $\frac{1}{2}$	68	19 $\frac{1}{2}$	31	41	59	2-4"
25	57	34 $\frac{1}{2}$	68	19 $\frac{1}{2}$	31	49	67	2-4"
30	62	39 $\frac{1}{2}$	73	19 $\frac{1}{2}$	31	57	75	2-4"
30	62	39 $\frac{1}{2}$	73	44 $\frac{1}{2}$	55	32 $\frac{1}{2}$	51	2-4"
30	62	39 $\frac{1}{2}$	73	44 $\frac{1}{2}$	55	41	59	2-4"
30	62	39 $\frac{1}{2}$	73	44 $\frac{1}{2}$	55	49	67	4-4"
30	62	39 $\frac{1}{2}$	73	44 $\frac{1}{2}$	55	57	75	4-4"
30	62	39 $\frac{1}{2}$	73	44 $\frac{1}{2}$	55	65	83	4-4"
36	68	45 $\frac{1}{2}$	79	44 $\frac{1}{2}$	55	73	91	4-4"
36	68	45 $\frac{1}{2}$	79	44 $\frac{1}{2}$	55	81 $\frac{1}{2}$	100	4-4"
36	68	45 $\frac{1}{2}$	79	44 $\frac{1}{2}$	55	89 $\frac{1}{2}$	108	6-4"
36	68	45 $\frac{1}{2}$	79	44 $\frac{1}{2}$	55	97 $\frac{1}{2}$	116	6-4"
36	68	45 $\frac{1}{2}$	79	44 $\frac{1}{2}$	55	105 $\frac{1}{2}$	124	6-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	114	132	6-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	122	140	6-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	130	148	8-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	138	156	8-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	146	164	8-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	154 $\frac{1}{2}$	173	8-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	162 $\frac{1}{2}$	181	8-4"
42	74	51 $\frac{1}{2}$	85	44 $\frac{1}{2}$	55	170 $\frac{1}{2}$	189	10-4"



# "KOVEN" WATERFILM BOILERS

(61)

## COILS AND TANKLESS HEATERS

Coil No.	Size Boiler Used With	COIL DATA			COIL CAPACITY		
		Sq. Ft.	Size Tubing	Pipe Conn.	No. Families	Gals. Heated 100° Per Hour Boiler Water	
						180°	212°
INTERNAL TANK HEATER							
4	Venko	2	3/4"	1"	1	20	30
1	"O"	1.75	3/4"	1"	1	14	20
5	Series	5	1"	1 1/4"	2	40	55
25-19	De Luxe	2.5	1"	1"	1	20	30
5-18	One Piece Sectional	5	1"	1"	5	40	55
75-29	One Piece Sectional	7.5	1"	1"	8	60	80

INTERNAL TANKLESS							
018	Venko	12	5/8"	3/4"	1	180	
180	"O"	12	5/8"	3/4"	1	180	
300	Series	15	5/8"	3/4"	2	300	
10-20	De Luxe	10	5/8"	3/4"	1	170	
14-20	One Piece	14	5/8"	3/4"	2	280	
16-20	Sectional	16	5/8"	3/4"	4	320	
19-28	No. 5 One Piece Sectional	19	5/8"	3/4"	8	380	
22-32	One Piece Double Sectional	22	3/4"	1 1/4"	11	440	
26-38		26	3/4"	1 1/4"	16	520	
30-43		30	3/4"	1 1/4"	23	600	
34-48		34	3/4"	1 1/4"	30	680	

MANIFOLD TANKLESS							
8-36-T	ALL TYPES	36	3/4"	1 1/4"	15	450	
8-48-T		48	3/4"	1 1/4"	20-25	600	
8-60-U		60	3/4"	2"	30-35	750	
8-72-U		72	3/4"	2"	40-45	900	
8-84-U		84	3/4"	2"	50-55	1050	
8-96-U		96	3/4"	2"	60-65	1200	

## BOILER INSTALLATION

(62)

- 1) Properly install and insulate combustion chamber of correct size, sealing all air leaks in base.
- 2) Install automatic draft regulator and adjust to maintain proper draft while boiler is being fired.
- 3) After several days firing, blow off boiler and thoroughly flush until boiler is free of oil, grease and dirt.
- 4) Treat water with Vinco or similar preparations.
- 5) Burn proper amount of fuel to develop boiler rating.
- 6) Test flue gases for temperature and  $\text{CO}_2$ .
- 7) Adjust combustion until proper  $\text{CO}_2$  and stack temperature is obtained.
- 8) On steam jobs use low water cutoff.
- 9) On stoker installations be sure to
  - (a) Insulate inside base.
  - (b) Leave sufficient space between retort and bottom of generators to get complete combustion. Order higher base or pit stoker to obtain proper clearance.

## BOILER MAINTENANCE

(63)

### AT THE BEGINNING OF EVERY HEATING SEASON

1. Thoroughly flush out and refill boiler. If necessary blow off boiler.
2. Clean all flues and flue passages. Chemical soot remover can be used.
3. Have combustion ( $\text{CO}_2$ ) and draft checked.
4. Adjust burner or stoker if necessary.
5. Carefully lubricate burner or stoker.
6. On stoker installations
  - (a) Make sure firebed does not get too high and keep clear of clinkers.
  - (b) Do not allow boiler to become clogged with ashes.

AN EFFICIENT HEATING PLANT IS MOST IMPORTANT FOR A COMFORTABLE HOME AND ECONOMY. BEST RESULTS ARE OBTAINED WHEN HEATING PLANT IS PROPERLY CARED FOR.

## SAFETY VALVES

(64)

A Range Boiler or Tank is a potential stick of dynamite unless properly protected by a good Relief Valve, preferably one sealed to relieve at a pressure not greater than the working pressure of the tank and one that can be manually operated at intervals such as a lever handle type.

All Relief Valves should be placed as close to the tank as possible.

Relief valve only—

Cold water line

Temperature—

Hot water line

Combination—

Hot water line

•

Copper boilers must also be protected by a vacuum valve.



Two Views  
of  
What An  
Overheated  
Tank  
Can Do.

## PRINCIPAL CAUSES OF EXCESS CORROSION

Reasons for Excessive Corrosion	Caused by	Effect	Usual Remedy
Carbon Dioxide	Decomposition of Organic Matter Absorption from Air Alum Treatment Dissolved Oxygen	Causes Acid Water Increases Hydrogen Ion Concentration Attacks Protective Coatings of Rust Adds Solvent for Iron	Aeration Lime
Dissolved Oxygen	Aeration Pressure	Attacks Metal Releases Carbon Dioxide Attacks Protective Coating of Hydrogen	Corrosion Chamber Boiling at Atmospheric or Lowered Pressures
Electrolytic Action	Dissimilar Metals Stray Currents	Causes Metal Ions to Go Into Solution Releases Hydrogen	Insulation Substitution of Similar Metals
Overheating	Lack of Proper Controls	Accelerates Rate of Corrosion	Mechanical Controls



Difficulty in feeding proper quantities of water treatment chemicals has heretofore made it impractical and expensive on any but the largest jobs.

Now, however, with the development of a slowly soluble crystal for water treatment, that dissolves at the rate of 25% of its volume monthly, the problem of feeding proper quantities is automatically controlled by the initial amount placed in the feeder and the amount replaced monthly. Use 1 lb. for initial charge and 1/4 lb. for monthly refill for every 6000 gallons treated.

## FEEDER—SIZES & CAPACITIES

Feeder No.	Initial Charge Lbs.		Refill—Lbs.		No. Families		Gals. Water Treated Monthly	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
7	1	7	1/4	13/4	1	7	6,000	42,000
15	8	15	2	3 3/4	8	15	48,000	90,000
60	16	60	4	15	16	60	96,000	360,000
120	61	120	15 1/4	30	61	120	366,000	720,000

## INSTRUCTIONS FOR OPERATION:

TO START—Fill chamber thru gate valve at top.

Close gate valve at top.

Open gate valve at bottom.

Release Air in chamber thru air vent

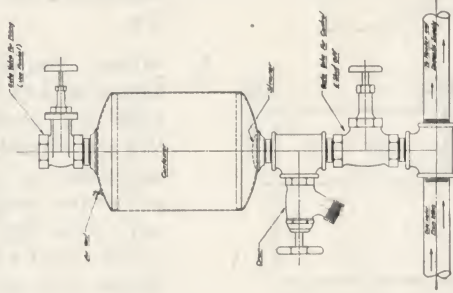
—Close gate valve at bottom.

Drain water thru draw-off cock.

Open gate valve at top and repeat starting instructions.

## REFILL

CAUTION: DO NOT HEAT WATER ABOVE 180°.



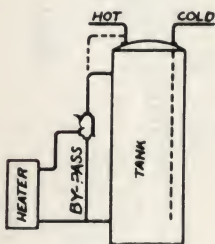
Installations should conform to all local health department regulations.

## OVERHEATING

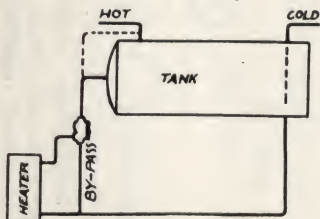
(67)

The demand for a continuous supply of hot water twenty-four hours a day, especially on Summer-Winter hook-up with automatic firing, has resulted in one of the chief causes of corrosion and that is the over-heating of the water. This over-heating can be readily prevented in nearly every case and below we give you a resume of various hot water installations and the methods used to prevent overheating.

1. For direct fired or with coils installed in the combustion itself, there are no mechanical means of controlling the temperature.
2. Where water is heated by gas-fired coils, the use of a thermostatic gas valve prevents overheating.



3. Pot Stove Installations can be controlled by the use of a thermostatic damper regulator fastened to the hot water circulating line which automatically banks the fire.



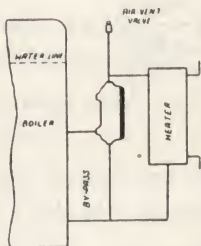
4. Where internal or external heating coils are used, a Watts circulation controller or temperature regulating valve may be used between heater and tank.

# OVERHEATING

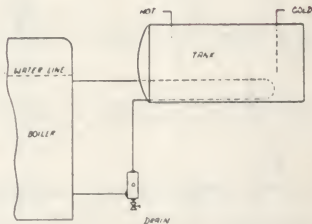
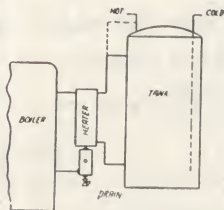
(68)

(Continued)

5. For hard water districts install Watts controller as follows:



6. A Bell and Gosset Thermo-Check can be used on return circulating lines as follows:



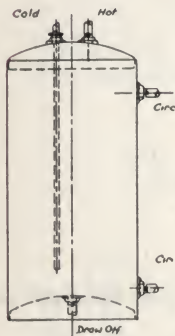
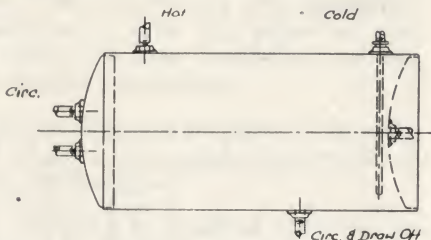
# CIRCULATION

(69)

There is also another cause of excess corrosion and that is the lack of proper circulation in the hot water tank.

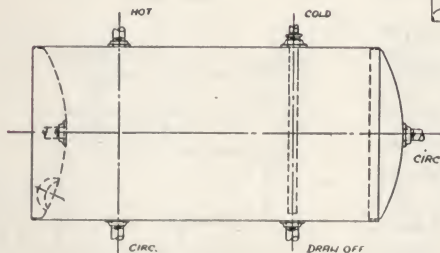
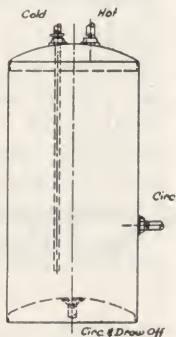
We show below four (4) illustrations with two vertical and two horizontal types to show how the hook-ups should be made to give proper circulation.

**UNIVERSAL  
HORIZONTAL  
RANGE BOILER**



*New  
Style*

*Old  
Style*



**STORAGE  
TANK**

## TANK SIZES

(70)

In a good many cases, a tank too small for the requirements is being used with the result that the tank must be overheated in order to supply the necessary quantity of hot water. This can be very easily remedied by the use of larger tanks.

### RULES EVERY PLUMBER SHOULD FOLLOW

The following rules should be adopted by every master plumber WITHOUT EXCEPTION:

1. Protect every range boiler and tank by using the proper relief valve.
2. Use larger range boilers and tanks where there is a demand for a quantity of water.
3. Use double extra heavy tanks wherever possible.
4. Control the temperature to prevent overheating which is one of the principal causes of corrosion, especially on pot stoves and Summer-Winter hook-ups.
5. NEVER use a coil or heating unit placed directly in the combustion.
6. Make sure that the water in each hot water tank is properly circulated.
7. Use similar metals in hook-up wherever this is possible.
8. Where there is a suspicion of electrolytic action, use insulating units to avoid this form of corrosion.







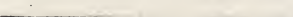
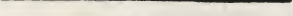
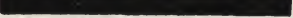


TABLE OF CYLINDRICAL TANK  
(71) CAPACITIES (Approximate)  
FOR EACH FOOT IN LENGTH OF TANK

Diam. Inches	Gals. per Foot	Diam. Inches	Gals. per Foot	Diam. Inches	Gals. per Foot	Diam. Inches	Gals. per Foot
5	1.02	11	4.94	22	19.75	48	94.00
6	1.47	12	5.88	24	23.50	52	110.32
7	2.00	14	8.00	30	36.72	54	118.97
8	2.61	16	10.44	36	52.88	60	146.88
9	3.31	18	13.22	38	58.92	64	167.12
10	4.08	20	16.32	42	71.97	72	211.51

EXAMPLE:

If tank is 6 feet long, multiply number of gallons given opposite diameter of tank by 6 and result will be the capacity of the tank.

THICKNESS OF STEEL—U. S. STANDARD

No. 18 Gauge	
No. 16 Gauge	
No. 14 Gauge	
No. 13 Gauge	
No. 12 Gauge	
No. 11 Gauge	
No. 10 Gauge	
3/16 Inch	
1/4 Inch	

# MEMORANDA

# MEMORANDA

# MEMORANDA

# MEMORANDA



This booklet is distributed to assist the Plumber in specifying for his requirements. We trust that it will prove a great help to you and that we may have the pleasure of serving you through your jobber.

Additional copies of this booklet will be sent to you gladly, on request.

---

### MANUFACTURING FACILITIES

Plate Shop—For making storage tanks up to 5000 gallons.

Range Boiler Shop—For making range boilers and small tanks.

Welding Shop. Machine Shop. Galvanizing Shop.

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